THE AMERICAN ARCHITECT AND BUILDING NEWS.

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THE published report of the Supervising Architect of the Treasury Department for 1875 has reached us. The report itself is brief, containing a succinct account of the condition of buildings under construction in the year 1875, and of their progress during the nine months of Mr. Potter's administration up to the date (Oct. 1) when the report was presented to the Secretary of the Treasury, with a few pointed and practical recommendations as to the management of the work of the office. The volume is made up by the customary tabular statement of all the buildings which have been in charge of the supervising architect's office, with their cost to date; a statement of the appropriations for public buildings in course of construction; a list of existing contracts with their dates and amounts, and the work contracted for; the reports to the Secretary of State concerning the new building for the State, War, and Navy Departments, and to the commissioners of the District of Columbia for the new jail now building under the care of the supervising architect; and finally the history of the investigation into the condition of the Chicago Post-Office, given in great detail, with the reports of the three commissions and those of the experts employed to test the building-stone and the foundations, the official contracts, and the whole of the testimony taken before the third and final commission. This part of the report is illustrated by several photographs of the stone-work and by a dozen plans, sections, and diagrams, which show the arrangement of the foundations of the building, and the tests employed in the examinations.

Twenty-three buildings were going on in charge of the office when Mr. Potter took possession of it. Of these the New York Post-Office is now substantially finished, and is occupied, though some further appropriation will be needed to complete it entirely. The original portion of the Boston Post-Office and Sub-Treasury is also finished and occupied, and the work of the extension is progressing. The Branch Mint and the Marine Hospital at San Francisco have been completed and are in use, as are also the post-offices at Columbia and Omaha, and the custom-house at Portland (Oregon). The post-office at Philadelphia and the custom-house at Cincinnati are fairly under way, the basement of the latter being completed. Also in course of construction and more or less advanced are the custom-houses at St. Louis, Charleston (a modification of the old design, which has been years in building), Port Huron (Mich.), Rockland (Me.), and Hartford; the appraiser's stores at San Francisco; and the post-offices at Parkersburgh (W. Va.), Raleigh, Trenton (N.J.), and Chicago. The post-office at Indianapolis is under repair, and the custom-house at New Orleans is undergoing great modifications. The old Mint at San Francisco, transferred to the Sub-Treasury, will have to be entirely rebuilt, the old walls being considered unsafe.

Of these buildings the post-office at New York, Philadelphia, Boston, and Chicago, the custom-houses at Cincinnati, Charleston, New Orleans, and St. Louis, and the Branch Mint at San Francisco, may be called buildings of the first class. The total cost thus far, including sites, has been, for the New York Post-Office, $7,907,038.36; for the Philadelphia Post-Office, $2,462,358.55; for the Boston Post-Office, $2,557,916.12, and for the extension of the same $718,903.96; for the Chicago Post-Office, $3,370,857.72; for the Cincinnati Custom-House, $1,478,120.60; for the Charleston Custom-House, $2,609,328.57; the New Orleans Custom-House, $3,920,499.31; the St. Louis Custom-House, $2,915,190.25; the Branch Mint at San Francisco, $2,163,496.44.

Mr. Potter has prepared during the year designs for eleven new buildings, nine of which are now in progress: viz., post-offices at Atlanta, Covington (Ky.), Dover (Del.); custom-houses at Evansville (Ind.), Fall River (Mass.); Grand Rapids (Mich.), and Nashville; the extension of the Boston Post-Office; and an assay office at Helena, Ark. Perspective views are given of the designs for all these buildings, and one of the Philadelphia Post-Office, — the work of Mr. Potter's predecessor, Mr. Mullett. The report recommends the sale of the Branch Mint at Charlotte (N.C.), the Marine Hospitals at New Orleans, Natchez, and San Francisco (not the new one, we presume); also that the site of the old Post-Office, and the building at No. 23 Pine Street, in New York be sold, and the proceeds appropriated to the purchase of a site for a new custom-house in that city, the need for which is strongly urged. The present custom-house is said to be ill adapted to its uses and far too small. The fact that the appraiser's stores are now two miles from the custom-house, greatly increases the cost of transportation of goods and of the collection of duties, besides which the Government pays $143,000 yearly in rent for leased quarters. It is recommended also that a new assay office be built in New York, the old one being badly situated and insecure; the present building and site can, it is stated, be sold for enough to provide new and suitable accommodation.

The suggestion of Mr. Potter with regard to the present system of percentage-contracts for stone-cutting, by which he thinks the cost of the work is made unnecessarily great, and his recommendation that the designing of public buildings shall be in some way thrown open to architects throughout the country, have already been made public, and have commanded the respect of the profession. The story of the Chicago Court-House has been clearly given by our Chicago correspondent, and we need not touch upon it.

AN architect writes from New York to call our attention to an example of what we must believe to be a very common practice, discreditable as it is. Some one who has an invention to push writes him thus: "We offer you liberal inducements to specify for these pulleys. Write us for particulars." Respectable architects so often receive such propositions from persons who do not know them personally, that evidently the number of men in the practice of architecture, who are accessible to this sort of bribe, must be considerable. It is of no use talking to architects of the impropriety of it, for the dishonorable men among them cannot be made honorable by lecturing; nor to mechanics, for the same reason. But it would be an advantage if the men who offer such bribes, and those who take them, could in some way be distinguished from their honester fellows. We are not sure that it would not be a good thing for every association of architects to keep a "black-book" for the record of all mechanics or dealers who are known to have offended in this way. How to help clients to distinguish the black sheep in the profession, is a difficult question. At least no professional etiquette ought to prevent their being made known when occasion offers, if the offence can be brought home to them; but in the nature of things it is difficult to bring it home. When the architectural associations have brought

themselves to that condition that it is a visible injury to architects not to belong to them, the penalty of disbarring may be inflicted with effect. At present a client's own shrewdness must be his safeguard: we say his safeguard, because of course the bribe comes ultimately out of his pocket. It is safe to say at least that the black sheep are most likely to be found among those who work habitually below the current rates. These rates have been fixed by general consent and long experience as those below which, on the whole, an architect cannot get a fair remuneration for good work. When, therefore, one takes work regularly at rates much below these, it is commonly safe to infer that there is something wrong somewhere: either the work is slighted in design or supervision, or the compensation is made up in some way that does not appear, or the architect is working for an unremunerative fee. We know that the question is a delicate one, for there is occasionally work that can be profitably done at less than the regular rates, or of which the honor goes to increase the compensation; there are young architects, or architects out of practice, that can better afford to work for fees that are generally unremunerative than not to work at all; and there are a few men of good standing and character in the profession, though we believe very few, who think it reasonable to fix their fees by a sliding scale at whatever they believe it will do to charge in each case. Of the first two cases the acute client can judge pretty well for himself. The men who hold the sliding scale do injury to the profession, we think, by invalidating one of the strongest guaranties for honorable practice. In the long-run the client may fairly conclude that diminished fees mean diminished service, if nothing worse.

Another correspondent, from New Orleans, asks where he can find published plans and specifications for a Southern farmhouse. We do not know of any work in which this problem is specifically treated: perhaps some of our readers may be better informed.

The Japanese have appeared in force at the Centennial grounds in Philadelphia, with a freight of fifty car-loads, and are said to have brought the material for a complete village, which they are to put up in the grounds allotted them. Building-lots in the grounds have been assigned to the States of Pennsylvania, New York, New Jersey, Delaware, Massachusetts, Connecticut, New Hampshire, Ohio, Illinois, Indiana, Michigan, Wisconsin, and Kansas. Great Britain and Germany have also procured sites. A Viennese bakery will be built, and a restaurant which will be a *succursale* to the *Trois Frères Provençaux*, famous among Americans in Paris. An extension is to be built in the rear of the Fine Art Building, nearly doubling its capacity. The number of exhibitors will be much less than at the Vienna exhibition; the applications amounting to about twenty-five thousand, against some seventy thousand at Vienna; but the space, already one-fifth greater than in the Austrian buildings, is still too small for the demands made on it. Next to the United States, Great Britain will be the largest exhibitor. The buildings, excepting the Agricultural Hall, are very nearly ready for occupation.

THE WORKMAN AGAIN.

Whoever remembers the active-minded workman forgetting his uncongenial work to talk intelligent nonsense about social and political problems which he has no means of studying, must, we think, be impressed with the waste of mental force and activity of which we spoke in our last article; and with the great importance, for the sake both of the man and of the community, of engaging as much as possible of this activity in the improvement of his work. Two things follow each other in a circle: to interest the workman in the work, improve the quality of it; to improve the quality of the work, interest the workman in it. The communication of the architect with the workman is through the work; and here is the point at which he can begin to work effectively.

An important stimulant, as well as a desirable quality in the work itself, is variety in design, — variety in construction to exercise the ingenuity of the workman, as well as to provide for the most varying uses and conditions of the work, in decoration, to keep his sense of art alive. There is no greater fallacy in administration than the belief that the quality of any but the most purely mechanical work can be kept up irrespectively of the frame of mind of the man who executes it; and any designer who does not keep a watch on this temper is sure to see his work suffer for it. Hence also the importance, in all decorative work, of personal intercourse and a relation of sympathy between designer and executant. There has been much discussion, first and last, as to whether mediæval architecture was not all the design of the workman who executed it; whether there was any architect and any plan, and whether the excellence of the work was not due to the absence of both; and believers in the workman-theory have agreed that the hope of modern architecture lay in the suppression of the architect. The facts show clearly enough that there were architects, that is to say, there were men whose special business it was to design buildings in the mass and in detail; and that they made both general plans and working drawings to scale with astonishing minuteness and precision. It is equally clear that the workman who carved a capital did himself design it, but in subordination to a pre-established scheme of which it was to become part. The real secret of the excellence and consistency of the work was that architect and workman — designer and workman if you will — were thoroughly in sympathy, and at one. Each knew entirely the aims, the spirit, the way of working, of the other; either from the long habit of working together, or because but one spirit and one way of working prevailed. Without such sympathy there is only one way of securing character and unity in architectural work, — the hierarchical, or despotic way, in which the designer formulates every thing from beginning to end, with a rigid exactness which provides for every detail beyond the possibility of deviation; and this can only be done in practice by repetition of limited and comparatively simple forms — as when the Egyptian master plotted on his checkered wall the unalterable outlines which his priesthood had ordained, in such simplicity that the servile workmen could follow them without chance of deviation. This was the despotic spirit of the classic and the formal Renaissance work; but it is utterly at variance with the temper of our time and our country.

Fortunately the last few years have seen a great development of work which ought to and does interest intelligent workmen. The rage for stereotyped work is abating; and among fastidious people, and those who take their tone from them, the current is setting toward the opposite extreme. In all sorts of ornament, the value of hand-work is recognized; and in the finish of buildings, within or without, the utmost variety is taking the place of uniformity. The architect has an opportunity and an inducement to encourage the workmen to execute and even design work of the utmost variety of detail, — work that must tax his brains to understand it, and often his power of contrivance to carry it out. The battle of the styles, whatever opinions we may hold about it, has cleared the air, we must admit, and made a tonic atmosphere about us, in which people are less tolerant than they were of lifelessness and monotony of design. Indolence will naturally tempt architects to rely on such design as calls only for stock forms to be used over and over; and the large class of men who design buildings, and are not

architects, will still encourage such a system. The want of fertility in invention or suggestion, which our old habits have bequeathed to us, will be a further obstacle; but it is one that is disappearing. Our architects are gaining constantly, have already gained surprisingly, in professional readiness. The desire of men of exact conceptions to define for themselves the precise execution of every detail, will also be a hinderance, and a more respectable one; but is extremely difficult for a man who has much work to do to carry this out fully; and practically, in most cases, the detail is fixed by draughtsmen working under the eye of the architect, and from more or less rough sketches. A little further extension of this habit, and first the draughtsman, and then the workman, learns to design from general directions, and under criticism, the greater part of the ornamental work that is wanted. We have already a small class of skilled men among us, who do this with extreme cleverness, and whose aid has become necessary in important work. It is greatly to be desired that their number should increase, and their services be constantly in requisition. Every encouragement ought to be given to workmen to use their best faculties in designing and contriving, not only because the work of the country is sure in the end to be vastly better for it, but in the interest of the workman himself; and his higher skill ought to receive such consideration and reward as should make every workman ambitious to attain to it.

There are many difficulties besides those we have mentioned. On the side of mechanics and manufacturers there is a resistance to any change in their usual processes of manufacture, or ways of working. Any thing which checks the rapidity of their production, for the moment diminishes their profit; and whatever disturbs the demand for indefinite reduplication is still more abhorrent. On the part of the public there is the influence of fashion and the habit of imitation, the preference for mechanical finish over excellence of idea, the fondness for cheap finery, and finally the effect of haste, and a desire for cheapness at any cost. But the tendencies are strong in the other direction: among them the increased desire for culture among Americans, and consequent interest in all the details of art, the popular schools of industry and art; abroad, the labors of such men as the Morrises, Mr. Ruskin, and M. Viollet-Le-Duc in their several ways, — have done much to educate workmen and improve their work. If there is any country in which this last effort ought to show itself strongly, it should be that which assumes to be freest from class prejudices and trammels of tradition, and to give the best opportunity for individual development.

SEGESTE AND SELINUS.

FROM M. RENAN'S SICILIAN LETTER.

FOR the archæologist the temple of Segeste presents some singular problems. It seems never to have been completed. Doubtless the destruction of the city by the Carthaginians, 409 B.C., put a stop to the works. The channels of the columns are not cut; the rough surfaces are not smoothed away: the cella seems never to have existed. For the artist it is one of the most effective of monuments. The colonnade, the architrave, the triglyphs, the unsculptured metopes, remain intact. The Doric capitals have a softness, a flexibility of curve, which has never been surpassed. The color of the stone, its sponge-like aspect, the certainty that the hand of no restorer has here been employed, retains one for hours in the shadow of these columns. The ancient city has, with the exception of the theatre, disappeared. Rome restored to her ally only an ephemeral existence, and the fable of its Trojan origin did not suffice to keep it from decay. Segeste is a desert; but Calatafimi and the neighboring places had gathered there to see the minister and the *scienziati*. Under a tastefully decorated tent we found an excellent luncheon. We drank to the old heroes of Segeste, to the peace and harmony which they could not establish, to the dead of 1860, who, more happy than their ancestors, gave Sicily to Italy upon this battle-field.

Towards one o'clock we took carriage again in order to reach Trapani before nightfall, skirting around Eryx (Mt. San Giuliano), which I had seen so many times in my voyages when doubling Cape Lilybæum. Scarped and fortified, it supported a two years' siege in the first Punic war. To ascend Eryx, to behold the traces of that celebrated sanctuary of the Erycinean Venus to which the Phœnician sailor twenty leagues away looked up as to the paradise where he would receive the reward of his toils, — this would have been my dream. It was impossible to think of it: the hours were counted, and to scale Mt. San Giuliano would consume a day. Moreover Signor Polizzi, the excellent librarian of Trapani, explained every thing to me from the foot of the mountain, recounted his search after the celebrated Carthaginian inscription of Eryx, and proved to me how useless it was to hope ever to see it again. This curious stone was seen in the seventeenth century by a certain Cordici, who left a manuscript history of Mt. San Giuliano, now to be found in the communal library of Palermo. Cordici gives an exceedingly rude drawing of it, which Torremuzza reproduced more or less faithfully, and which Gesenius borrowed with little care from the work of Torremuzza. Thus distorted by three intermediaries, the inscription was impossible to decipher: it would have been better not to have tried, especially at an epoch when the interpretation of Phœnician monuments was in its infancy. I know not what illusion impelled Gesenius, Elrard, Meier, and Blau to see in it a fragment of literature, a funeral lamentation upon the death of a young girl. All these fine notions must be given up. Thanks to Signor Polizzi, Signor Amari, and Signor Salinas, we now possess tracings, rigorously exact, and photographs, of the copy of Cordici which is in the library of Palermo. Besides this, another autograph copy of the work of Cordici has been discovered at Mt. San Giuliano. With this assistance, though they are even yet far from having read the whole, they understand enough to be able to say that the inscription was votive in character, and was addressed to *Rabbath Astoreth* (Erycinean Venus) under the appellation of "Prolonger of Life."

Should we see Selinus? This was what we kept asking one another after the vessel had doubled the Lilybean Cape. Selinus can scarcely be visited except from the sea; but the nature of the coast, which has no port, presents serious obstacles to the approach of a large vessel. Compelled to anchor half a league from shore, it can only launch its boats when the sea is quiet; and the slightest disturbance renders their return impossible. The commander allowed us to disembark, but warned us, that if, during our visit to the ruins, the wind should rise he must gain Trapani, and leave us to our fate. But the weather proved marvellously propitious. We expected to find a desert; but scores of boats were awaiting us. A jetty and a road had been improvised by the people of Castelvetranto; carriages had been prepared for us. The ruins themselves would certainly have gained had they been visited in solitude; but these attentions, this cordiality, this simple feeling of a people, who, believing themselves forgotten by the world, were now proud that a minister and men whom they presumed to be celebrities had come to visit their island, — all this had something in it which went to our hearts. The syndic of Castelvetranto reminded us of it in a touching manner when from time to time the crowd pressed in on us: "Remember, gentlemen, that these people have come thirty miles to see you."

What a spectacle! Seven temples, five of them enormous, are lying there upon the ground. The diameter of one of the columns is as much as eleven feet, and all have those marvellous Doric capitals, the most beautiful thing that man has ever invented. Nowhere can one seize better than here, step by step, the progress of those divine curves towards perfection. Each essay, each experiment, is visible; and, more extraordinary than all the rest, when the creators of this marvellous art had realized the perfect, they no longer changed any thing. This is the miracle which the Greeks alone knew how to accomplish, — to find the ideal, and, once found, to hold to it.

Ah! why did these demigods believe it was their duty to devour one another? From this aspect the ruins of Selinus produce the most mournful impression. This immense destruction, accomplished wittingly and with malice prepense, causes one to curse Carthage, who brought into this delicate world the mercenary savages of Africa; but it causes one especially to detest those divisions of city from city, those fratricidal wars, in which the Grecian world was so ingulfed. The destruction of Selinus was the work of Segeste, one year afterwards to perish in its turn. One can understand that after this the Roman peace seemed a blessing.

These ruins of Selinus are worthy of Greece in the grandness and perfection of the work. The archæological commission was unanimous in asking of the minister that henceforth the main effort of the Sicilian excavations should be directed upon this point. Already have the researches of Signor Cavallari had the happiest results, particularly in the neighborhood of the Acropolis. Here have been found those celebrated metopes which now form the ornament of the museum of Palermo, monuments of an archaic style, still Asiatic, and which perhaps explain the transition so much sought for, between Oriental and Grecian art. The other metopes of Selinus show us the progress of sculpture step by step. Here, as in the middle ages, it did not advance as rapidly as architecture. Architecture had fixed its forms while sculpture was still hesitating; and the Doric school of Sicily failed to keep pace with that of Athens, several of these constrained and almost awkward figures being of the same date with those of the Parthenon. One noticeable circumstance is that the naked parts of the female figures are executed in white marble, exactly as upon painted vases: the hands, feet, and heads of female personages are white. Polychromy covering every thing may have harmonized a juxtaposition which, as we now see it, it is hard to find agreeable.

THE ILLUSTRATIONS.

NEW DORMITORY FOR PRINCETON COLLEGE. MESSRS. POTTER AND ROBERTSON, ARCHITECTS.

This dormitory is now building for the "College of New Jersey" on the college grounds at Princeton, to meet the increasing demands upon them for more and comfortable rooms for their students. As will be seen from the ground plan, the building (which is five stories high) is expected to accommodate eighty students, there being sixteen provided for on each floor. It is to be laid up with ashlar of light Newark (N.J.) stone to the level of the second-floor beams. Above this the body-stone will be a light bluish-gray Pennsylvania marble (rock faced) ornamented with Newark stone. The roof it is proposed to cover with dark-red slate, without bands of any other color. The window frames above the transoms will be filled with rolled cathedral glass leaded in geometrical patterns.

It is proposed that the dormitory shall be ready for occupancy by the 1st of next September.

THE FIRST MORMON TEMPLE.

We give, as a curiosity in the history of American architecture, a view of the first Mormon temple, built at Nauvoo, Ill. It stood on the top of a bluff about one-half a mile from the river, facing west. In appearance, outside and inside, it was much like an ordinary Congregational church, with a vestibule opening by swing doors into the audience-room. The size was perhaps 80 x 100 feet. Stairs from the vestibule gave access to a well-lighted basement in which the font stood. The material of the building was the cream-white crystalline limestone, common in many parts of the State, — the masonry of coursed rubble. The tower was of wood.

The Mormons, it may be remembered, driven out of Missouri by a mob in 1838, were received into Illinois, and there founded Nauvoo, "the City of Beauty." The plan of the temple was "revealed" to Smith; but the designer was, it is said, an English "Gentile." The corner-stone was laid in 1841. During the five years that the temple was building, the popular hatred of the Mormons was growing, and they were forced in the spring of 1846 to begin another emigration westward; but, under guidance of their revelation, clung to Nauvoo till their temple should be finished. It was finished and dedicated while the town was already besieged, and on the very day of its dedication was abandoned to the Gentiles, who a year or two afterwards destroyed it. Our illustration gives a general view of the temple, from a view taken on the spot in 1846, very soon after its abandonment, the detail of the principal order, and a sketch of the font, built after the description of the sea of brass in Solomon's temple.

THE FIRST CHURCH, BOSTON. MESSRS. WARE AND VAN BRUNT, ARCHITECTS.

The exhibition this year of the American Society of Painters in Water Colors, New York, is, it is said, finer than any before. The number of members has been increased; and its last exhibitions have been successful in every way, few pictures of any excellence remaining unsold at the close of each.

THE PROPOSED MAIN SEWERAGE SYSTEM FOR BOSTON.

We have received the following communication from a gentleman in Boston: —

"A commission has just reported a plan of intercepting sewers for this city, which are estimated to cost over six and a half million of dollars, to waste the contents in the sea. Boston is the centre of a drainage basin for Charles and Mystic Rivers, and for several small streams. It has a large quantity of wet marsh land, and of made land, marshes filled with loose gravel. All the water-closets and other filth are emptied into the sewers, and the soil is completely saturated with this filth. The consequence is, that our sick-rate and death-rate are assuming large proportions; and our people are justly alarmed. The question is, Can *this* be a remedy?

"In my judgment it is not. It may abridge but cannot cure the evil. I was on the sewerage committee of the city government some years ago, and gave the subject a good deal of attention. I am therefore impressed that the only cure is, to keep the filth out of the sewers, deodorize it, and get it spread over the earth as compost as soon as possible. Dry loam, I understand, is a perfect deodorizer of human excreta, but water is not. This material can be *utilized* without offence or injury, but cannot be *wasted* without both. I state my impressions of the matter thus, to give you an idea of the case, and to ask if you will kindly furnish me or the public any information which will aid them to settle this question upon right principles.

"Is there any way out of this difficulty, for large cities and towns, but to utilize and not waste filth?

"In other words, to organize a system by which filth shall be at once mixed with earth, so that all of its offensive gases will be at once absorbed, and held to enrich the earth, instead of disposed of as now to do injury?

"The matter is to come up in our city government for discussion. But very few know any thing about it, except to follow in the beaten track.

"Can you give us any suggestions or aid, which will help the public to obtain an intelligent opinion upon this important subject?

"The English Parliament have had many petitions to save their streams from pollution. The same difficulty is being felt in this State."

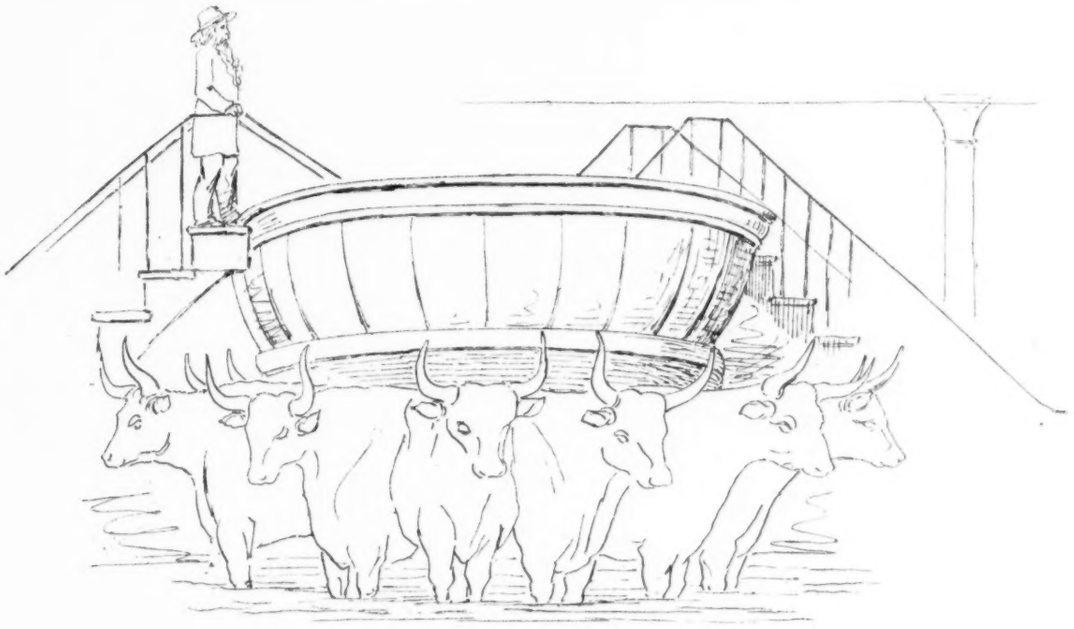
As we said in our last issue, we are disposed to treat with very great respect and confidence any proposal upon so difficult a subject, made by men so qualified to form a correct judgment as are the members of the commission to whom the Boston drainage problem was intrusted; and, while we are ready to take part to any reasonable extent in a discussion of a matter of so much consequence, any suggestions we may make, which are not in accordance with the recommendations set forth in the Commissioners' Report, are to be taken only as suggestions for careful consideration, not even as a statement of our belief that the plan is not the best that could be devised; for from the generally received point of view it undoubtedly is the best, if we set aside the question of cost.

The general subject of the disposal of the wastes of towns, and of the dilution of domestic filth by large volumes of water, has long been discussed, and the discussion has been marked by great ability (and guided by great experience), without any marked advance having been made by those who oppose the theories advanced by nearly all competent authorities who have given attention to the subject.

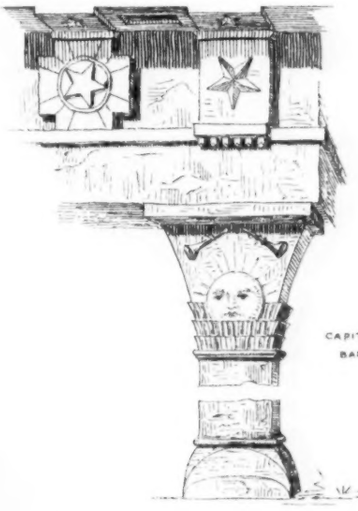
If the water-carriage system is accepted as the one that will be in vogue during the next century, then the plan proposed by the commission, or some modification of it, must be carried out; for after all, especially in the case of Boston, the great question is the question of a satisfactory outlet for the city sewage.

The suggestion thrown out in our last, that the great volume of storm-water might be kept out of the intercepting sewers altogether, and discharged directly into the river and harbor, and that the streets should be kept so clean that such a disposal of their wash could effect no annoyance and no injury to the harbor, still commends itself to our judgment. Were this done, a much smaller outlet sewer would answer the purpose, and greatly less pumping-power would be required, for it would then be necessary to conduct through this outlet only the actual waste of houses and a small additional flow from the streets, — much less than the water of heavy storms.

In one respect Boston is very favorably situated; that is, it has a tidal variation of about ten feet, so that a flushing reservoir of a few acres extent used for sending twice a day a strong cleansing current into an outfall sewer delivering at low water (at Moon



BAPTISMAL FONT.



CAPITAL and BASE.

THE TEMPLE, NAUVOO.

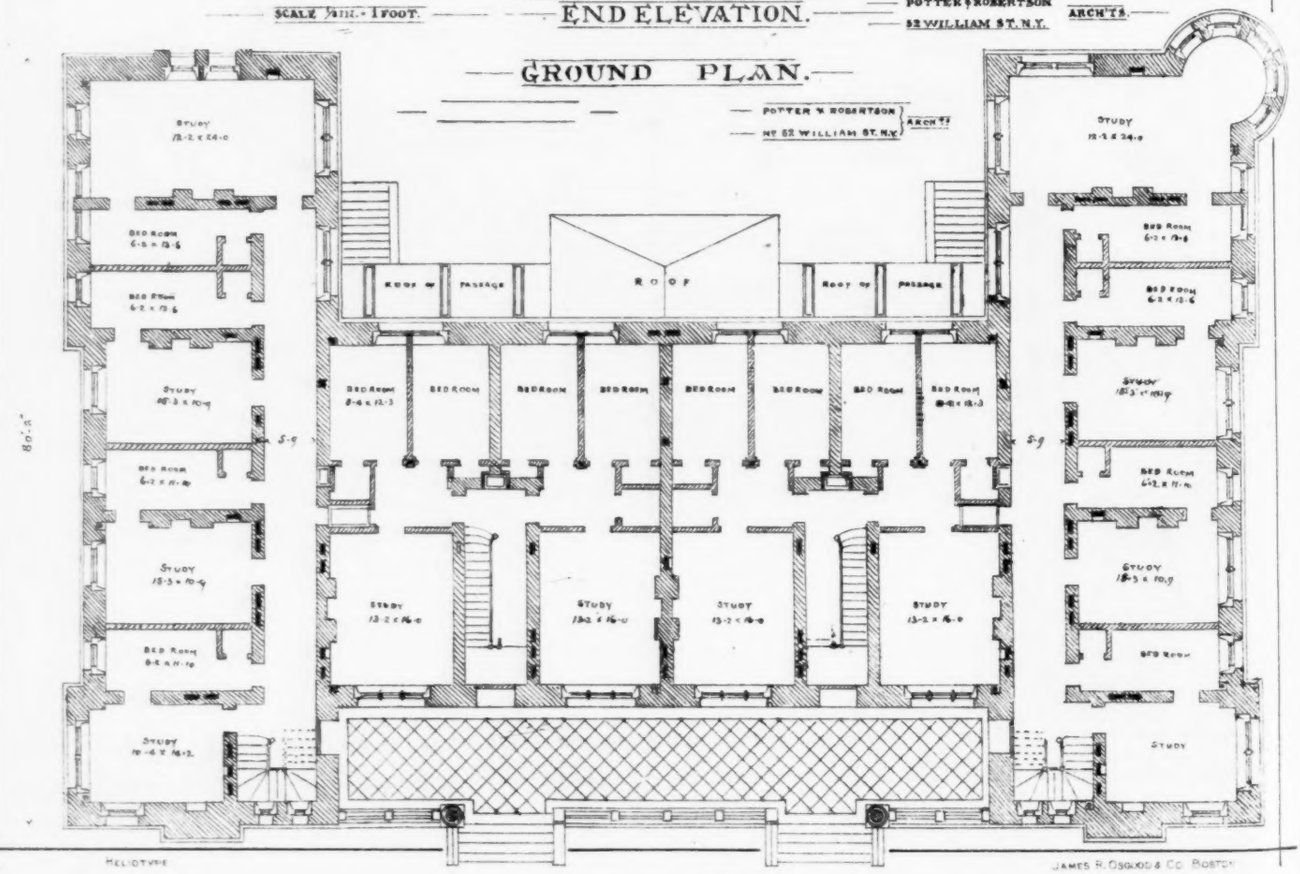
Oct: 1846

(Light cream colored crystalline sandstone.)

SCALE 3/16" = 1 FOOT. END ELEVATION. POTTER & ROBERTSON ARCH'TS. 52 WILLIAM ST. N.Y.

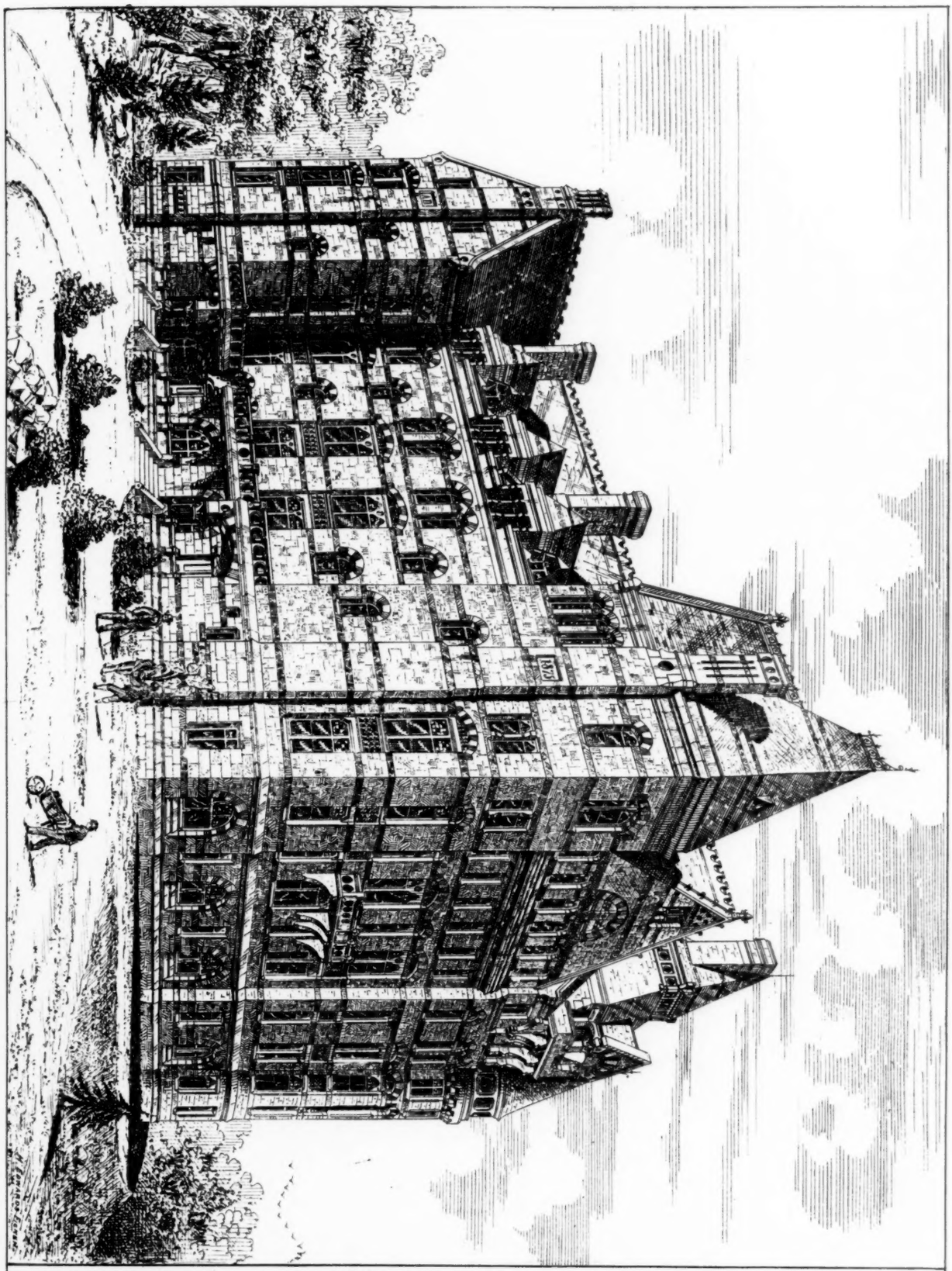
GROUND PLAN.

POTTER & ROBERTSON ARCH'TS. NO. 52 WILLIAM ST. N.Y.



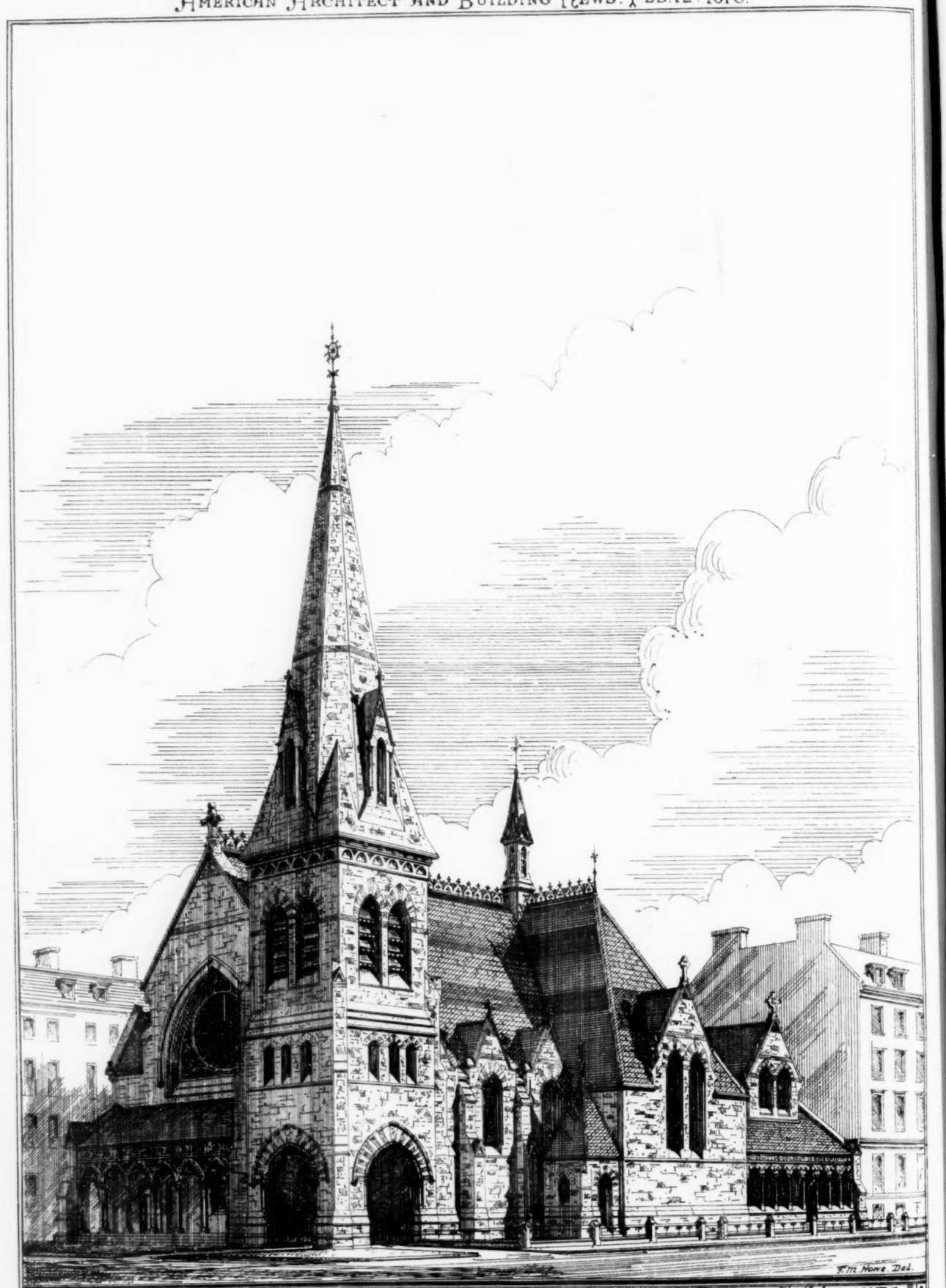
HELIOTYPE

JAMES R. OSGOOD & CO. BOSTON



: Dormitory Building for Princeton College : Potter & Robertson · Architects :

HELIOTYPE JAMES R. OSGOOD & CO. BOSTON



FIRST CHURCH, BOSTON. WARE AND VAN BRUNT, ARCHTS.

HELIOTYPE

JAMES R. OSGOOD & CO. BOSTON

Island or other suitable point) could be regularly filled at high water by a tide-gate opening from Charles River.

Under this system a deep pumping sump might be located at one or more convenient points to receive all of the actual sewage of those parts of the city lying too low for direct discharge into the outfall sewer; and a very insignificant pumping-power would be sufficient to lift this sewage from the low-lying districts into the outfall sewer. The sewage from the high-lying districts would not have to be pumped at all.

Even should this modified plan be found inadequate for the eventual requirements of the great Boston of the future, it is not unlikely that the saving of interest, working expenses, and repairs that it would effect during the several decades for which it would suffice, would make its adoption a real economy; while it would have the further advantage of postponing the decision of so important a question until a future day, before which it is to be hoped that the experience of the world in sanitary engineering may point out some new system that would render this more expensive work unnecessary.

We have great confidence in the efficiency of the dry-earth system, and are even disposed to think that its drawbacks in the case of large towns would be less serious than is often assumed. At the same time these drawbacks are by no means of slight importance.

1. This system makes no provision for the removal of liquid wastes; and, while it would withhold from the sewer the most offensive material, it would still leave to be provided for much that is offensive and dangerous, and the chief materials which now obstruct house-drains and street-sewers; that is, road-wash and kitchen grease.

2. Although with its modern appliances the earth-closet system is capable of being made entirely satisfactory to the most fastidious classes, it requires such an amount of detailed supervision as to complicate very much its introduction into private houses, where an official inspector is always regarded as an intruder. For the poorer classes of the people (those classes who can never be trusted properly to manage the ordinary water-closet), the dry earth out-of-door privy, under proper supervision, has been found by experience in some of the larger manufacturing towns of England to be the most available of all contrivances.

3. The objection so often raised to the adoption of this system, on the score of the enormous amount of earth that must be brought into and removed from the town, need not be considered in America, where the chief fuel is anthracite coal. Anthracite ashes, as we know by a long personal experience, are one of the very best possible materials for use in the earth-closet; and from their porous and easily aërated character they even admit of an amount of re-using that would be impossible with ordinary garden loam. Every household (leaving factories entirely out of the question) produces a sufficient amount of ashes to more than supply its necessary closets; and these ashes require now to be removed beyond the limits of the town. They are now removed at an uncompensated cost, and often require the purchase of expensive dumping-grounds. Could they be passed several times through the closet they would acquire from such use a value that would at least pay a portion of the cost of their handling; and ground for their reception would be readily furnished by farmers. The value of this material as manure under the circumstances of its introduction in a city would be much less than has been supposed; but, regarded from the scavenger's point of view, it would be very different from the quite inert refuse matter with which we now have to deal.

Thus much in reply to our correspondent's suggestion on this subject. Practically the adoption of the dry-earth system in a large city involves a revolution in architecture, in domestic habits, and in sanitary inspection, which may well make any city government hesitate to become the first to adopt it.

The Baltimore system of receiving all household wastes, semi-solid and liquid, in well-cemented vaults, emptying these by portable pneumatic apparatus, and mixing their contents (under suitably located sheds) with the ashes and street dirt of the town, seems satisfactory; and it would involve a much less radical change from the present system.

Liernur's pneumatic process, by which all of the closet waste, and the more solid portions of the kitchen waste, are drawn through iron pipes by pneumatic action to central stations, where at slight cost it is dessicated, and made fit for manure without perceptible loss, is worthy of careful consideration. It has its partisans and its opponents; who are on the one hand almost savage in their criticism, and on the other more than enthusiastic in their praise. Unfortunately the facts do not yet exist to warrant us in expressing a definite opinion for or against it. We must content ourselves with saying that it is theoretically so good, and that its advocates point to such well-tried examples of its successful operation, that we are disposed to hope that it may in time (perhaps before Boston will need the full service of its large outfall sewers) assert its claim to universal recognition and adoption.

By the commission's plan the sewage of Boston will unquestionably be wasted. It will be thrown into the sea, whence the land will get back only so much as is brought by our fishermen and seaweed gatherers, and what is deposited by the over-flowing of marsh lands. Practically we may say that it will be quite thrown away. At the same time, we may be quite confident, that, if discharged at the points selected by the commission, the sewage of the city, however enormous it may become, will be no source of offence, nor will it in any wise endanger the public health.

WOODEN VAULTING.

To the Editor of The American Architect.

Sir, — My attention has been drawn to the following passage in a late number of the New York World, occurring in its notice of the earlier numbers of your journal: "The vestibule of the new Harvard Memorial Hall looks impressive until one discovers from the text that what is there described as a 'vaulted ceiling' is not properly a vaulted ceiling at all, but an imitation of a vaulted ceiling in 'brown ash.' There are so many good things to be done in ceilings with timber that this nonsensical use of it is entirely without excuse. It is surprising that the same man should be capable of translating Viollet-Le-Duc as Mr. Van Brunt has done, and then flying in his face in this extraordinary manner."

To make and to discuss points of criticism is the surest sign of life in art. Pray permit me, then, to realize one of the most obvious uses of the journal you have so happily established, by considering briefly the point raised by your contemporary.

One of the distinguishing characteristics between English and French vaulting, as set forth in M. Viollet-Le-Duc's admirable article on vaulting in the *Dictionnaire Raisonné*, is that while the filling-in between the ribs in the former is flat or level from rib to rib, like a panel made of straight courses of stone or planks of even width, in the latter it is concave, a spheroidal surface, like a portion of a dome; in the former the ribs are often made of long stones resting on their ends like timber, while in the latter they are always composed of small voussoirs, multiplying the joints. "It is quite possible," he says, "that the English originally made their vaults of a series of planks laid upon arches of stone or ribs of timber. In fact, this system of vaulting may still be seen in English work of the fourteenth century, as in the cloisters of Lincoln Cathedral. We must not forget that in English architecture, as in that of all Northern races, wooden construction has always held an important place." Again: "The French system of vaulting could never be executed with planks or boards, while the English system readily admits, nay more, suggests, this method of construction. Indeed, in the fifteenth century English vaulting became rather a work of carpentry than of masonry." (See pp. 524, 525, 530, and elsewhere.) It may be added that the cathedral of Carlisle has a wooden wagon vault; the choir of Ripon has quadripartite vaulting of wood built in 1300, and restored by Scott in 1866; the vault of the wide nave and choir of York, erected in the perpendicular period, and restored by Smirke, is also of wood. But while the last-mentioned example is painted to imitate stone (whether following the original traditions in this regard, or not, I cannot say), in the other examples quoted, including that of Lincoln (1280-1300) the wooden construction is evident and characteristic. The plaster casts of the bosses of the Lincoln cloisters in the collections of the architectural museum of the Institute of Technology in this city clearly indicate the open grain of the wood unobstructed by paint. So much for the archæological point of view.

As regards the æsthetic bearings of the question, it is to be noted that all Gothic vaults, whether of wood or stone, are interior features, — ceilings covered by wooden roofs. The few familiar exceptions are sufficient by their singularity to establish a rule of almost universal acceptance. Of whatever material they are composed, these ceilings are mere matters of decoration. If the question is as to the decorative treatment of the under side of a watershed roof of wood or iron, of course it is essential that the construction of that roof should be acknowledged and embellished. But where the conditions are, as in the Memorial Hall at Cam-

bridge, to provide a suitable ceiling for a room thirty feet wide and a hundred feet long, over which rises, as an external monumental expression of its uses, a tower of equal width and two hundred feet high, it is no offence against any rule of construction or art to throw wooden arches across at the proper height, and to connect them continuously with a superimposed ceiling of wood, as in a wagon vault, thus obtaining an effect of height without an inordinate wall space. And inasmuch as from one of the long sides of this hall projects at either end a square bay 30 ft. x 30 ft., used as an open staircase; the corresponding vault or arched ceiling over these bays, intersecting at right angles with that of the main hall, thus generates by a rational process a quadripartite vaulting, the material of which is in no way disguised. A sufficient number of subordinate ribs are added at once to strengthen and to decorate the construction. This ceiling, we maintain, as a matter of design under the conditions imposed, and as a matter of sentiment moreover, being a form of decoration traditionally associated with venerable and solemn usages, and therefore appropriate in an apartment devoted to the memory of the dead, — this ceiling, we insist, is not "nonsensical," either as regards its material or form, its combination of material and form, or its expression as a device to touch the mind of the beholder. This same form of vaulting, if executed in stone, would have had the obvious monumental advantage of greater durability, and the obvious practical disadvantage of greater expense; but not greater would have been the necessary sympathy and alliance between the material and the form. A flat panelled ceiling with or without supporting trusses would have exposed an inordinate height of wall in a room so narrow. A ceiling formed like the under side of a sloping roof with open timber construction (as in the adjoining dining-hall on the one side, and as in the theatrum on the other, to which this hall serves as a common vestibule) would be obviously inadmissible as implying a roof which did not exist. What, then, remains? A wagon vault, whether of wood or stone, proclaiming its material, and fulfilling every constructive condition of truth; and, if a wagon vault is allowed, it may be intersected by other vaults, always using such forms as most readily lend themselves to honest expression in the material adopted, as set forth by the high authority referred to by the critic.

It may not be improper here to cite another work, not because of any especial merit of its own, but because it happens to illustrate more completely perhaps the principles I have here endeavored to explain. The central corridor of the "head house" in the Union Passenger Station at Worcester is twenty-five feet wide and one hundred and sixty-eight feet long. Sixty-four feet of this length is under an outside sloping roof, which is sheathed with wood on the under side of the rafters and treated with open trusses, the conspicuous feature of which is a light arch of wood construction under the tie-beam. The remainder of this corridor extends within the high "train-house," and consequently needs no water-shed roof of its own; the ceiling of this portion is therefore treated as a wagon vault whose arches or ribs are continuous and concentric with those under the before-mentioned wooden trusses.

This statement is submitted not as a defence against any system of imitation, but in the interest of sound design and honest work as opposed to caprice and disregard of principle, and with the belief that a discussion of this kind, if only because it is a discussion, can hardly be without its good uses.

Henry Van Brunt.

COMPETITIONS.

To the Editor of the American Architect.

After reading critically the published "Abstract of a projected Tract on Competitions," the sentences which most tenaciously cling to the memory are oft-repeated prescriptions for the cure of chronic disease; beginning with, "This difficulty may be avoided," or, "This evil may be to some extent counteracted," and the like. Perhaps when Dr. Richardson builds his "model city," and doctors of medicine are needed no longer, the architects of that Utopia of hygiene may engage in friendly competition on this new and improved basis, with great profit to all concerned, and an increase of brotherly love. But, looked at in the light of the practical experience of our day and generation, the chance of clearing the many and dangerous pitfalls noted in the "Abstract," and of reaching by this devious way the solid ground of honorable practice, is slight indeed.

It would seem that a careful examination of the *pros* and *cons*, as given in this report, would convince any one that it is impossible to make such a system serviceable to true art.

But it is assumed by all who treat this intricate question, that architectural competitions are a necessity, and cannot be done away with; forgetting entirely that a considerable and respectable minority abstain from them altogether. This plea of necessity has no real foundation in fact. It is maintained in the interest of the few, and not of the profession at large, or the public. The tract will fail to accomplish its intended purpose, if it does not clearly and forcibly state the opinion of the many who believe that architectural competitions are injurious to all concerned, and that they can never be made otherwise; that they have no precedent in the honorable practice of other professions, and that the "Institute," even if not taking strong ground against them at once, should use its influence to discourage them so far as practicable, with a view to their eventual abolition. The holders of this belief also consider, that, although mistaken ideas of interest and necessity may lead some into such contests, the majority who advocate them do so with no desire to reform, but rather to take advantage of and perpetuate their abuses. Competing architects (those who make a business of it) are already getting to be a marked class. For some of them, Carlyle's British workman's prayer would not be inappropriate: "Oh, help us, thou great lord of shoddy, adulteration, and malfeasance, to do our work with the maximum of slimness, swiftness, profit, and mendacity; for the Devil's sake, amen!"

All who have the honor of the profession at heart, and who look in their own practice for something besides temporary gain and firework popularity, for lifelong satisfaction, should set their faces not against the abuses of competition (its abuses are inherent and irremediable), but against the system altogether. We dwell with some complacency on our isolated and independent position as American architects; and yet we adopt and cling to the worst feature of foreign practice. There is scarcely such a thing on record as a fair "open competition," nor even of a "close" one, without reasonable cause of complaint.

In the famous Edinburgh Cathedral contest, the "alternative design" and "excessive cost" tricks were practised with eminent success; and there is strong reason to suppose that one of the designs was little more creditable to its author than a forgery would have been. The English societies have tried for years to reform the system, and it only grows more rotten.

Mr. George H. Birch, a president of the "London Architectural Association," said in his opening address, "I never went in for a competition in my life. . . . I told you I had strong views on some subjects; and I view competitions as the 'curse' of the profession."

Most of the lack of fraternity among architects may well be laid to this undignified cat-and-dog scrabble for the bones of "practice;" the competent, the incompetent, the faithful worker, and the charlatan, all entering pell-mell into the same mêlée. It is claimed that the public does not respect the profession. How can any one respect those who so utterly fail to respect themselves or their most honorable calling?

John A. Fox.

MR. SEDDON ON ARCHITECTURAL CONSISTENCY.

From the reports of the lively address delivered by Mr. J. P. Seddon before the British Architectural Association a short time ago, we make the following extracts: —

"Consistency and refinement are the qualities in relation to building which constitute it architecture; with which, therefore, they may be taken as almost synonymous. Consistency, at any rate, is the characteristic of all true architecture of the past, and refinement of that of its best periods; the want of both distinguishes most of the buildings of the present. I could not help being struck by the tone of the discussion that followed the reading of Mr. Burges's paper. Nearly all the speakers seemed to seek a solution of the great problem of the day, — how they were to ally æsthetic architecture to the practical building which alone the world imperatively demands; whether they might or should be eclectic; whether buildings copied from the works of the Greeks, Romans, Goths, or Italians ought or ought not to stand cheek by jowl; whether sash windows were to knock out all artistic fenestration, or mullions and transoms to be crammed down the throats of our employers, whether they would or no; or, whether a compromise could by any possibility be effected, by leaving the lower sash to the tender mercies of plate glass, described by one enthusiastic reformer as "an emanation from the jaws of hell," so long as the upper one might be subdivided by those bars to which Gothic mullions had dwindled in the days of Queen Anne, and which are now counted by some as a direct revelation from

heaven? . . . . Well might Mr. Burges, aghast at such a culmination to the host of questions that had been put to him, exclaim that he had but agreed to give one lecture, and then found himself asked for two. . . . Eclectic, to continue the use of that euphonious adjective to describe a jumble, we are and must remain, simply because nine-tenths, or rather ninety-nine hundredths, among us are not really architects at all, but simply highly respectable gentlemen who have mistaken their profession, or, at the best, building surveyors, among whom, however, the public, Gallio-like, caring for nothing of these things, scramble their commissions for buildings. If the public saw their way they would gladly follow Sir Henry Cole's advice, and give their commissions to men who make no pretence at all of adhesion to art. Sir Henry is not, however, the originator of this idea, for the Romans forestalled his notion by getting their plans and construction virtually first settled by engineers, and then employing Greek architects to dress up their elevations for them. . . .

"Educate, however, by all means; for the truth is we do not want genius so much as common sense. It is better that the surveyors who have to look after speculating builders, and to whom the public give their commissions, should be educated. It will be better, if they will be eclectic, and cannot do any thing else, that they should know one (what they term) style from another. They might learn to be ashamed of the murderous mixtures of such which some of them now concoct under cover of their favorite euphonious adjective. But that one real architect will be discovered or elaborated by the process, who would not have come as well to the light under Mr. Smiles's system of self-help, I for one do not believe. To the querists who ask whether they may build in this style or that, or first in one and then in another, I reply, You do not know, you have not a conception of what architecture really is. It is not a thing of shreds and patches. It is simply building with consistency and refinement. It is a universal language, although there may have been many dialects and many *patois* of it. When men had something to say with it, they recked little how they said it. You vex yourselves only with the manner, and forget that there is any matter concerned. You compose with it nonsense verses, like boys at school, and forget that such were invented only for exercise, and that now you are men you should put away childish things. You run to all the ends of the earth to find out some uncouth style of talk different from that of your fellows, in the hope that it may distinguish you and impose upon the public an idea that you are original; and the last dodge has been to imitate the gibberish of the time of Queen Anne. However, you will perhaps allow that it is probable that the number of those architects who could work out successfully for themselves the problem for which so many seek to know the solution, is likely to be but limited. . . .

"The President of the Royal Institute of British Architects, in his opening address this session, took occasion to lament the lack of architecture in the miles of speculative building of the day. I am going to ask you to join me in a wail of woe over works supposed to be architectural in comparison with these; in fact, over the rampant iniquity of sins in actual commission, as still more to be deplored than those of simple omission. Architecture parodied is more offensive than the mere ignoring of architecture. I do not, however, wish you to think that I desire in any way to defend the doings of these arch-offenders against both science and art — the speculating builders to whom the English public has delivered itself over, a willing victim, body and soul. Stupidly housed in ugly, inconvenient, and monotonous brick boxes, with holes cut symmetrically in them, the public stays contentedly until a fever breaks out or frost sets in. Then, however, it immediately raises an insensate howl against the profession which was never consulted, because sewer gas was laid on to, and fresh air carefully kept out of, its dwellings; and because all the pipes were left exposed to the elements. Such prosaic evils as these did not, however, constitute the grievance alluded to by the President. His was one that, rightly or wrongly, the public cares far less about — rightly, I am disposed to think. His sorrow was rather because our suburban terraces are not 'architecturesque,' to borrow again that word which Prof. Kerr so kindly invented. Now, seriously, would it be of the slightest benefit to any living soul that they should so be? The august architectural profession has, no doubt, missed the commissions which it would well have earned had it acted in its respectable though lower capacity of surveyors, and simply stopped the scamping of the drains, and attended to the proper disposition of the pipes. In other respects, if architecture is what the majority of the architects to whom our principal street buildings are relegated seem to consider it to be, I think the speculative builders have the best of it. Since refinement is generally conspicuous by its absence from the works of both alike, there is a consistency, even if it be but of ugliness, about the erections of the humbler class of builders which might bear away the palm. The backs of the houses erected by the latter correspond better with the fronts, whereas a glance from the windows in the rear of the architecturesque structures of the former shows that their idea of architectural beauty and fitness is but skin deep. This question of the disadvantage of building without architecture at all, and of the mere architecturesque, is being forced upon me most unpleasantly in the neighborhood in Westminster wherein I happen to live. There vast buildings, public as well as private, have risen, and are rising, like mushrooms. In some of these architecture is altogether set at nought, and in others its name is taken in vain. I am quite at a loss to decide which is the worse or the more vulgar of the two. . . .

"Such as I have described it to you was the architecture of the past, a universal and intelligible language for all nations of the earth; progressive, simple at first, complex at last, consistent always, and refined when it realized sufficiently settled conditions. It knew nothing of 'styles;' but of style, in the sense M. Viollet-Le-Duc has so ably treated of in his 'Dictionnaire,' it took the utmost account. Now, you ask, what is to be the architecture of the future? I ask, Will you go back to the prattle of childhood because you like baby-talk? Will you ignore all that science has done for it, and deny yourself the arch or the pointed arch because you like the work of those that knew not of such things? No, you are the heirs of all the ages, and every detail man has devised is your heritage, which it were folly in you to set aside. But, if this universal language is for your use, are you going to make only nonsense verses with it as in the days of your schooling? Are you going to stick pediments on the tops of gables, and chop them in two for the diversion of the ignorant? Are you going to set up as crowning ornaments to your buildings piles of obelisks and pots with balls on them in ludicrous guise of cruet-stands? Are you going to turn curved brackets upside down, and torture their outlines, in the vain hope that your crotchets will be thought original? For goodness' sake, if you will be eclectic, out of the vast repertory you possess, choose the best, or at least what is consistent with common sense when applied to the purpose you propose to put it to, and strive, by refinement to be gained by the study of the best works of the past, to be in your own less barbarous or barbaric than is that of the architecture of the present."

JAPANESE WORK AT THE CENTENNIAL GROUNDS.

THE most curious part of the day's work was the driving of a number of piles, each six feet long and ten inches in diameter, upon which is to rest, like a corn-crib, a rectangular structure eighty-four by forty-four feet, and in general appearance like the pictures of Japanese houses that children see in their primers. The way in which the Japs managed the pile-driving brought many a burst of laughter from the bystanders. They had a portable tripod about twenty feet high, with two fixed pulleys under the apex, from which was suspended by a grass rope a cylindrical iron hammer weighing three hundred pounds. Six Japs on each side of the machine seize a grass rope which passes over one of the pulleys; the foreman stands at one side, holds up his forefinger, closes one eye, and then, apparently not satisfied with this, picks up a short stick, holds it in a vertical position between his two forefingers, sights the pile with it, and at last winks with both eyes as a signal to the workman that the ceremony of Japanese plumb-bobbing is concluded; whereupon the hammer moves up and down very rapidly, driving the pile an inch into the earth at every descent, until it is time for the foreman to do a little more plumb-bobbing. One pile struck a rock; and, while everybody was wondering how things were to be managed, one of the gang ran off and brought back something that had teeth like a saw, but which was shaped like a butcher's cleaver; but the panting Jap had severed the stick in about half the time required for a saw of American make to do the same work.

The Japs draw their planes towards them, instead of pushing them from them, and use an ink line instead of a chalk line. It resembles a tape-line case, and contains a sponge which may be saturated with ink of any color; through this sponge the cord may be drawn and then wound up, dispensing with the tedious process of chalking. The holes for the piles were marked out in this odd way: two posts, one at each end of the foundation, were connected at the top by a tightly-drawn cord; from end to end of

this, the mandarin foreman walked with his rule, measuring off spaces, which he marked by tying bits of string in bow-knots to the main cord, and then standing off to go through his delicate operation of plumb-bobbing, which he repeated every time that his men removed the tripod to drive a new pile. Their adze is a remarkable tool, chiefly on account of its handle, which is shaped as Hogarth's line of beauty might be if warped by torrid weather. The wielder of this tool stands over his timber, and hacks away, driving the steel far underneath his foot at every blow. When the ropes of the pile-drivers were too long, the foreman fastened blocks of wood in slip-knots to shorten them; but one of these slipped and dropped on the head of a young Jap, causing him to let go the rope, fall backward, and roll over to a big log, upon which he sat down to rest himself and laugh.

The Japanese square is eighteen and a half inches long, and nine and a quarter wide ; and is graduated, like the rule, by the decimal system, nine and a quarter of their inches being equal to eight of ours.

In the bamboo building not a nail will be used ; all the material is there, dovetailed, bevelled, and mortised, ready to be fastened together with wooden pins. The artisans live in a frame structure within the enclosure, do their own cooking and laundry work, and live on soup, rice, and dried meats, which they brought with them in hermetically sealed cans. The officials having charge of Japanese operations in the park refuse to give the slightest information as to what they are doing. When asked about their building and intended exhibition, the questioner is invariably put off with, "Wait till comes time ; you then see." It displeases them when spectators laugh at the uncouth mechanical operations of the flat-nosed and tawny-featured Orientals. — *Philadelphia Times.*

NOTES AND CLIPPINGS.

Among recent archæological acquisitions in Rome are twenty-seven bases of memorial inscriptions in honor of various Roman emperors and empresses; and a relief representing Jupiter, Mars, Nemesis, Victory, the Sun, and Juno, — all found upon the Esquiline. The Kircherian Museum has lately received a gift of some frescos relating to early Roman history, and said to date from about 300 B.C. They were offered by the donor, Prince Torlonia, upon whose estate they were found, to the English and Russian Governments for £4,000; but the offer was declined. The seven subterraneanean chambers of the Mamertine Prison, which dates from the time of the kings and the republic, are under the control of the British and American Archæological Society, who regularly open it to visitors. The further exploration of the prison, which would be likely to settle some disputed questions, is said to be delayed from a lack of funds; and an appeal is made to trustees in charge of endowments for educational purposes for aid in advancing this desired object.

A building, by some thought to be a woollen factory, has been recently unearthed in Pompeii, and contains some grotesque small figures of children and other beings, on one of its inner walls. An adjacent private house, also recently brought to light, is said to possess some fine wall paintings. A small group of two bacchanal figures, male and female, standing beside a column, is especially noted for its graceful treatment. It is said that henceforth many of the more artistic works will be left where they were found, instead of being transferred to the Museum at Naples. Among the objects so left may be noted a statuette of a faun kneeling, a relief representing a sacrifice, and a life-size statue of a draped and veiled woman styled a "Vestal Virgin."

Mr. Frederick S. Barff, Professor of Chemistry at the British Royal Academy of Arts, thinks the decay in the manufacture of stained glass to be due, in a great degree, to the use of borax in the fluxes. He mentions several manufacturers who use no red lead in their glasses for stained windows, and he does not consider the glass too soft to be used with fluxes that do not contain borax. Sufficient attention, he says, is not given to the process of firing. The organic matter used to make the colors adhere to the glass should be burnt off in a current of air before firing; and fluxes of different fusing points should, if possible, be used, the harder ones first. The old glass painters, he said, made their own glass, fluxes, and paint, and therefore knew their adaptability to each other: hence there was no danger of a flux running before the glass was soft enough to unite with it, or the glass melting before the flux was softened.

The buildings of the Chilian International Exhibition, now opened at Santiago, comprise a Central Palace with five annexes and several subordinate buildings. The palace is quadrangular in shape, the four sides enclosing a central hall fifty feet high by sixty feet broad. The principal façade, on the north, is three hundred feet in length, has two end towers, and a portico in the centre. The depth of the building is about two hundred feet. The eastern and western annexes are each about five hundred feet in length. The southern annex is three hundred and seventy feet across and one hundred and seventy feet deep. In addition to these there are annexes for carriages, besides many smaller buildings of an ornamental character.

The new Washingtonian Home, Chicago, occupies a frontage of 104 4-12 feet upon West Madison Street. The main building is sixty feet deep, and five stories and a basement high, the upper story being a mansard. The basement story is eight feet clear ; stores, sixteen feet; second story, fourteen feet ; third story, twelve feet ; fourth story, twelve feet; and fifth story, ten and six-tenths feet. The rear or chapel building is seventy by forty-five feet, and three stories in height, and contains the kitchen, dining-hall, laundry, store-room, &c., in the basement ; the chapel and anterooms, on the second floor ; and the hospital, convalescent room, amusement rooms, padded room, private ward, and bath-room on the third floor ; each floor being connected with the main building by a sixteen-foot corridor. The water privileges are excellent, the building being furnished with hot and cold water, wash-rooms, five bath-rooms, and seven water-closets. Mr. Jesse M. Holden is the architect. The building cost in the neighborhood of sixty thousand dollars.

An apartment house has recently been built on Ohio Street, Chicago, having a frontage of forty-four feet, and reaching through three stories. It is intended for six families, each being furnished with eight rooms, exclusive of closets, bathrooms, and pantries ; viz., a parlor, library, sitting-room, dining-room, kitchen, and three bedrooms. Each family has cellar-room and coal-vaults in the basement. These rooms are all on the same floor, and are designed to meet the wants of persons with small incomes. The cost of the whole building was eight thousand dollars; and the land on which it stands, thirty-five thousand. It is said that each set of apartments can be let at from twenty-five dollars to thirty dollars per month, which would amount to about two thousand dollars a year on the entire building, or about fifteen per cent of the total outlay. Mr. Wheelock is the architect. It has been the drawback of apartment houses in this country hitherto, that their suites have almost always been let at prices which families of small means could not afford.

The Musée Historique of Orleans having outgrown its quarters in the famous Maison de Diane de Poitiers, it has been determined to restore and occupy the adjoining house known as the Maison Lambron. This house is a charming structure of brick and stone, of the time of Henry II., and contains a large hall running through two stories, which will be set apart for the special exhibition of relics of Joan of Arc.

A model for a wonderful ferry across the British Channel and the Atlantic has been tried in England. The structure consists of three parallel tubes, far enough apart to allow paddles to work between them, the whole being linked together to form a single vessel, covered by a deck, on which the inventor, Mr. Edgarton, proposes to carry railway trains, and a thousand head of cattle at a time. The Channel passage is to be made with these ferries in an hour and a half; and cattle are to be transported across the Atlantic at the rate of two pounds a head.

A dense stratum of chalk, at a convenient depth, has been traced from the French to within a short distance of the English shore, along the course of the proposed Channel tunnel. The work of testing has been discontinued on account of severe weather, but it will be resumed when the weather gets warmer.

M. Wallon, Minister of Public Instruction in France, has ordered the restoration of the Cathedral at Rheims, at a cost of $100,000.